

**REMARKS/ARGUMENTS**

Claim 1-21 stand in the present application, claims 1, 2, 4, 6 and 7 having been amended. Reconsideration and favorable action is respectfully requested in view of the above amendments and the following remarks.

The Examiner has objected to the title of the invention as not being descriptive. As noted above, Applicants have amended the title of the description to correct the deficiency pointed out by the Examiner.

The Examiner has rejected claims 1-21 under 35 U.S.C. § 112, second paragraph, as being definite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. As noted above, Applicants have corrected all of the deficiencies pointed out by the Examiner. Accordingly, the Examiner's § 112, second paragraph, rejection of the claims is believed to have been overcome.

The Examiner has also rejected claims 1-4, 6-8, 11-12 and 16-18 under 35 U.S.C. § 103(a) as being unpatentable over Bonsma et al. ("Bonsma") in view of Triantafillou et al. ("Triantafillou"), Kwon et al. ("Kwon") and Adar et al. ("Adar"), has rejected claims 5, 9-10 and 13-15 under 35 U.S.C. § 103(a) as being unpatentable over Bonsma in view of Triantafillou, Kwon, Adar and further in view of Official Notice, has rejected claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Bonsma in view of Triantafillou, Kwon, Adar and in further view of Bonsma et al. (WO 03/034669); and has rejected claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Bonsma in view of Triantafillou, Kwon, Adar, Bonsma WO 03/034669 and further in view of Yemini et al. Applicants respectfully traverse the Examiner's § 103 rejections of the claims.

The Examiner admits that at least the following present claim 1 features are not taught or suggested by Bonsma.

*. . . said node for directory look-up comprising*  
*(i) data identifying that one of the plurality of*  
*virtual directories with which the node for directory look-up is*  
*associated,*  
*(ii) linking data comprising addresses of other*  
*such nodes for directory look-up, and*  
*(iii) software operable,*  
*(a) in response to an enquiry message that*  
*identifies another of the virtual directories, forwarding*  
*the message to another node for directory look-up of*  
*the network, and*  
*(b) in response to an enquiry message that*  
*identifies the virtual directory with which the node for*  
*directory look-up is associated, generating a reply*  
*message identifying a computer that the node for*  
*directory look-up is located on . . .*

*. . . wherein at least one computer has retrieval*  
*means responsive to receipt of a query identifying a directory*  
*and an item within that directory to*  
*(i) send to a node of the virtual network for*  
*directory look-up an enquiry message identifying the*  
*directory,*  
*(ii) upon receipt of a reply message thereto, to*  
*send to the computer identified in the reply message an*  
*enquiry message identifying the item, and*  
*(iii) to receive the reply message containing the*  
*item.*

See, Office Action at pages 6-7. The Examiner asserts that the following present claim  
1 features are taught by Bonsma at sections 3 and 3.1.

*. . . each computer that has a said data item stored*  
*thereon having at least one node of a virtual network for*  
*directory look-up, . . .*

\* \* \* \* \*

*. . . each computer that has a said data item stored*  
*thereon having, for each item stored thereon, a node of a*  
*virtual network for item look-up, . . .*

*Id.*, at pages 5-6. Applicant respectfully disagrees, and on the contrary submits that these claim features are also not taught or suggested by Bonsma as explained below.

Bonsma discloses that a collection of virtual nodes is connected by a communication infra-structure, and that each node is given a potentially arbitrary location-independent node identity. Bonsma discloses a virtual network created from long- and short-ranged links between nodes. The nodes are organized based on their identities. However, Bonsma fails to disclose or suggest the specific hierarchy of the nodes for directory look-up and the nodes for item look-up required by the present claims. *Compare*, Bonsma at sections 3 and 3.1 to the present claims. More particularly, the cited portions of Bonsma fail to disclose a computer storing data items, the computer having, for each item stored thereon, a node of a virtual network for item look-up and the computer having, for each virtual directory the stored items are assigned to, a node of a virtual network for item look-up. *Id.*

Nor do the secondary references of Triantafillou, Kwon, and Adar solve the above described deficiencies of Bonsma. The Examiner asserts that the teachings of Triantafillou and Kwon when combined with Bonsma disclose the "*node for directory look-up*" and "*node for item look-up*" limitations of the present invention, and the components that these nodes comprise. However, the Triantafillou system merely provides for the processing of queries identifying documents, those documents belonging to document categories. The Triantafillou system does not provide for the processing of queries specifically identifying document categories (this is further

explained below). Thus, even if it were conceded for the sake of argument that the Triantafillou/Kwon system taught one type of node that read on to a certain element of the present invention (and this is not conceded), then this could only be for one of the two types of node presently claimed, i.e., the "*node for item look-up*" element of the present claims, and could not at the same time read onto the different claim element of "*node for directory look-up.*"

The Examiner asserts that section 3.3 of Triantafillou teaches the following claim feature:

*. . . said node for directory look-up comprising:*  
    (i) *data identifying that one of the plurality of virtual directories with which the node for directory look-up is associated,*  
    (ii) *linking data comprising addresses of other such nodes for directory look-up, and*  
    (iii) *software operable*  
        (a) *in response to an enquiry message that identifies another of the virtual directories, forwarding the message to another node for directory look-up of the network, and*  
        (b) *in response to an enquiry message that identifies the virtual directory with which the node for directory look-up is associated, generating a reply message identifying a computer that the node for directory look-up is located on; . . .*

See, Office Action at page 8 (citing Triantafillou at section 3.3). Applicant respectfully disagrees. The cited passage of Triantafillou discloses a process of query processing. This is disclosed as a two step procedure – the first step being performed by a requesting node which sends a query and the second step being performed by a target

node which receives said query. Neither the requesting node nor the target node of Triantafillou anticipates the node for directory look-up required by the present claims.

More particularly, Triantafillou discloses as step 1 of its two-step procedure:

1. The requesting node does the following:
  - a. It maps the keywords to one or more semantic categories using appropriate categorization tool (...) . . .
  - b. Through its DCRT (Document Category Routing Table) it finds clusters of nodes with the semantic categories.
  - c. It chooses a random number from each associated cluster, using its NRT (Number Routing Table) and sends the query to it. If no live node exists, the query will fail. The random selection of nodes can ensure that cluster nodes get an equal share of the workload targeting their cluster.

See, Triantafillou at section 3.3. Therefore, the requesting node of Triantafillou fails to disclose "software operable [ ] in response to an enquiry message that identifies the virtual directory with which the node for directory look-up is associated, generating a reply message identifying a computer that the node for directory look-up is located on" as required by the present claims.

Triantafillou further states (at step 2 of the two-step procedure disclosed in section 3.3):

2. The target node does the following:
  - a. It matches the categories of the query against the semantic categories of its documents and finds a number  $a$  of resulting documents matching the query.
  - b. If the number of resulting documents is less than  $m$ , (the target node) forwards the query to all of its known neighbours in the cluster, decreasing  $m$  by  $a$ . This will be recursively repeated until the desired number of documents is found or all reachable nodes of the cluster have been queried (...) . . .
  - c. The final result set is returned to the requesting node by (the target) node.

Therefore, the target node of Triantafillou returns only the final result set comprising documents specified in the query. The target node only returns a reply comprising entities corresponding to the "items" of the present invention, i.e., the target node fails to disclose software operable to generate a reply message identifying the computer the node for directory look-up is located on, as required by the present claims. Moreover, the target node fails to disclose software operable, in response to an enquiry message that identifies another of the virtual directories, to forward the message to another node for directory look-up of the network. Indeed, Triantafillou teaches that the requesting node only forwards the query to its neighbours if the number of resulting documents is less than a specific number.

In addition, similarly to Bonsma the secondary references fail to teach or suggest:

*. . . wherein at least one computer has retrieval means responsive to receipt of a query identifying a directory and an item within that directory to*

- (i) send to a node of the virtual network for directory look-up an enquiry message identifying the directory,*
- (ii) upon receipt of a reply message thereto, to send to the computer identified in the reply message an enquiry message identifying the item, and*
- (iii) to receive the reply message containing the item.*

These features are not taught or suggested by any of the cited references taken singly or in combination, because the fundamental specific hierarchy of the virtual network for directory look-up and the virtual network for directory look-up are not taught or suggested in any of the prior art.


Accordingly, for all of the above reasons, independent claim 1, in addition to independent claims 2, 6, 7, 11 and 13 which contain similar limitations to the claim 1 limitations discussed above, and their respective dependent claims patentably define over any combination of the cited art. In view of the deficiencies noted above with respect to Bonsma and Triantafillou it is not believed necessary to discuss any further the additional secondary references, and the Examiner's citation of "Official Notice." However, it is respectfully submitted that Applicant does not agree that the Examiner has properly relied on "Official Notice" in rejecting claims 5, 9-10, and 13-15, and requests that the Examiner cite a specific reference supporting the assertion that "use of nesting categories for grouping purposes was well known in the art at the time the invention was made by one of ordinary skill in the art." See, Office Action at page 18.

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Therefore, in view of the above amendments and remarks, it is respectfully requested that the application be reconsidered and that all of claims 1-21, standing in the application, be allowed and that the case be passed to issue. If there are any other issues remaining which the Examiner believes could be resolved through either a supplemental response or an Examiner's amendment, the Examiner is respectfully requested to contact the undersigned at the local telephone exchange indicated below.

Respectfully submitted,  
**NIXON & VANDERHYE P.C.**

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